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Nata

Client:

LumCAT: 4-2412-L

Luminaire: 92.70.131.00

Report No: NT2018010916

Test No: GC2018010916

LampCAT: SEOUL SAWx15

Lamp flux(lm): 3105.0

Number of Lamps: 1

Length(mm): 102

Phm Type: C

Voltage(V): 34.7000

Current(A): 0.6400

Power (W): 22.1140

PF: 0.0000

Ballast type: DC

Width(mm): 102

Height(mm): 0

Photometric Results

Lumens(lm): 3025.79, Efficiency(%): 97.45% , Luminous Efficacy(lm/W): 136.83

Central intensity(cd): 21945.480, Maximum intensity(cd): 21945.480

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=15.2

[C90/270]Total=15.2

Field angle(10%Imax): [C0/180]Total=35.0

[C90/270]Total=35.0

Maximum s/h(1/2): C0_180=0.26 C90_270=0.26

Maximum s/h(1/4): C0_180=0.29 C90_270=0.29

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 101.58%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.588%

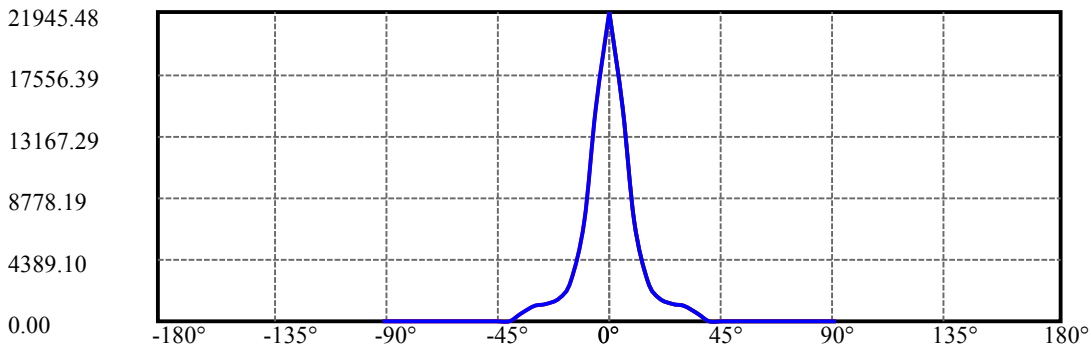
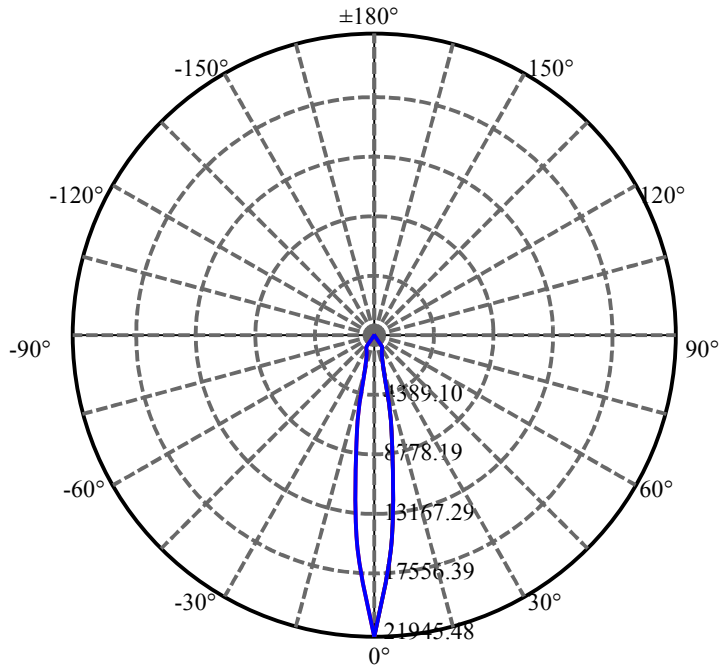
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	21945.480	131.238	131.238	4.227%	4.337%
5.0	15139.271	723.253	854.492	23.293%	28.240%
10.0	7060.570	672.047	1526.538	21.644%	50.451%
15.0	2813.657	399.169	1925.707	12.856%	63.643%
20.0	1598.907	299.753	2225.461	9.654%	73.550%
25.0	1182.047	273.825	2499.285	8.819%	82.600%
30.0	1022.907	280.347	2779.632	9.029%	91.865%
35.0	517.730	162.774	2942.406	5.242%	97.244%
40.0	33.158	11.683	2954.088	.376%	97.630%
45.0	18.884	7.319	2961.408	.236%	97.872%
50.0	16.902	7.097	2968.505	.229%	98.107%
55.0	16.207	7.277	2975.782	.234%	98.347%
60.0	16.152	7.667	2983.45	.247%	98.601%
65.0	15.911	7.904	2991.354	.255%	98.862%
70.0	15.113	7.784	2999.138	.251%	99.119%
75.0	14.294	7.568	3006.707	.244%	99.369%
80.0	14.115	7.619	3014.326	.245%	99.621%
85.0	14.074	7.685	3022.011	.248%	99.875%
90.0	13.771	3.774	3025.785	.122%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2779.63	89.52%	91.86%
0-40	2954.09	95.14%	97.63%
0-60	2983.45	96.09%	98.60%
0-90	3022.01	97.33%	99.88%
0-120	3022.01	97.33%	99.88%
0-180	3025.79	97.45%	100.00%
60-90	46.23	1.49%	1.53%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-23.56	2420.63	77.96%	80.00%

ZONAL LUMEN SUMMARY

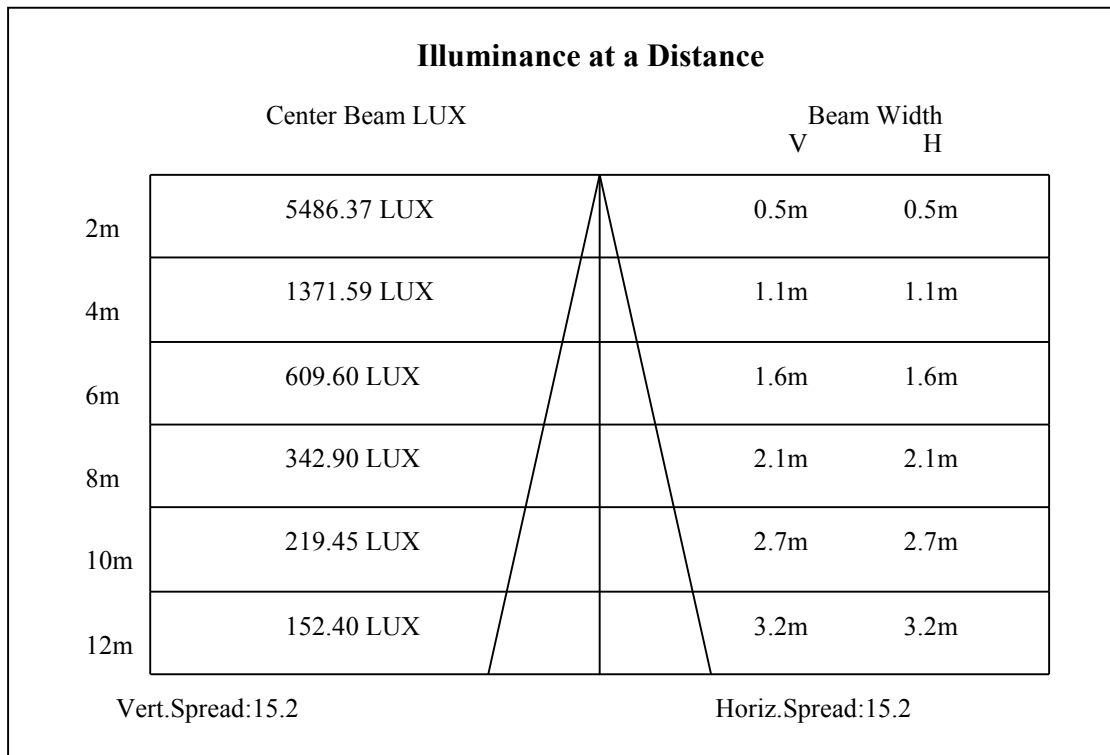
0-10	1526.54
10-20	698.92
20-30	554.17
30-40	174.46
40-50	14.42
50-60	14.94
60-70	15.69
70-80	15.19
80-90	7.69
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

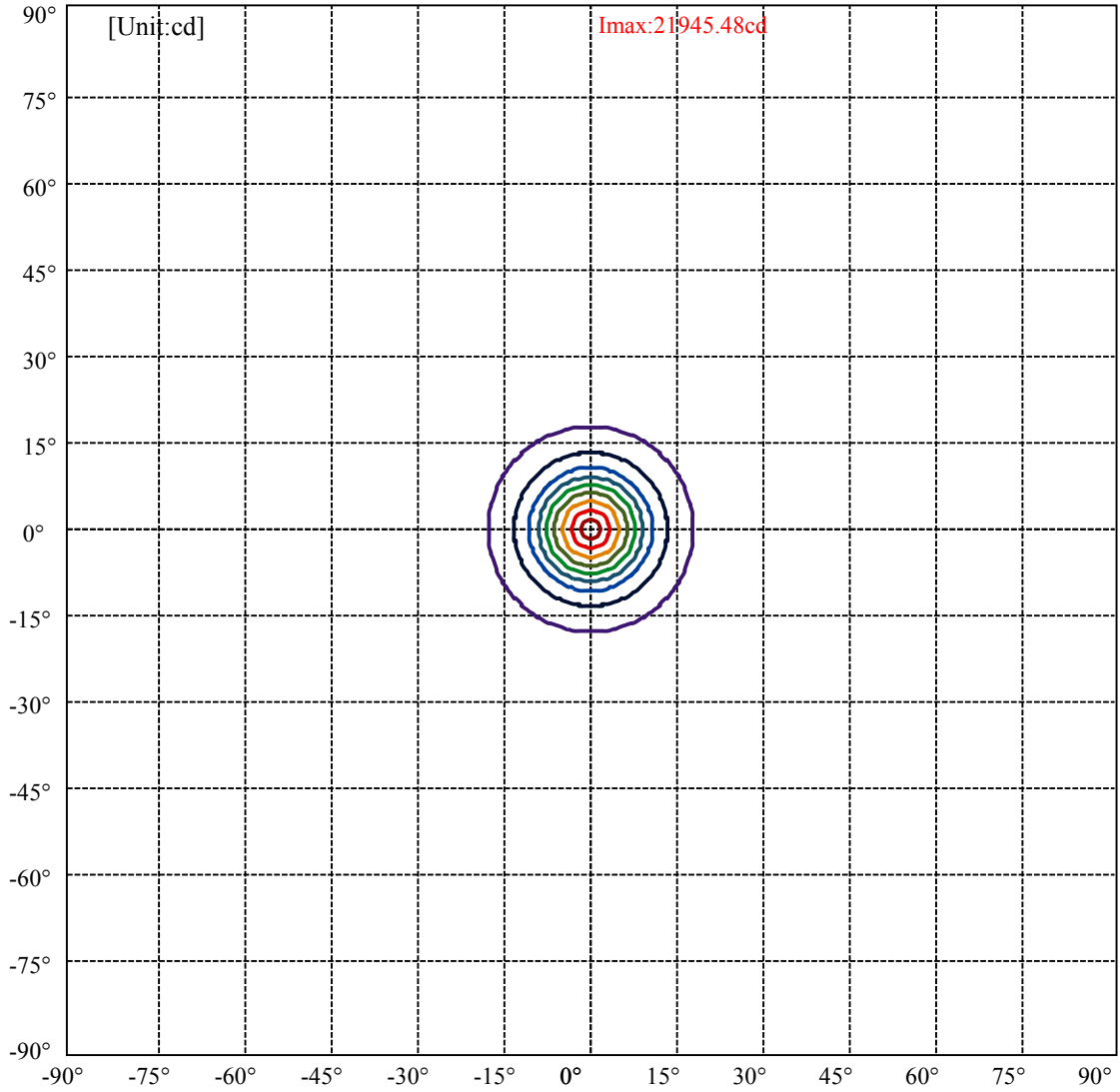


C0(Max): —————
C0/C180: —————
C90/C270: —————

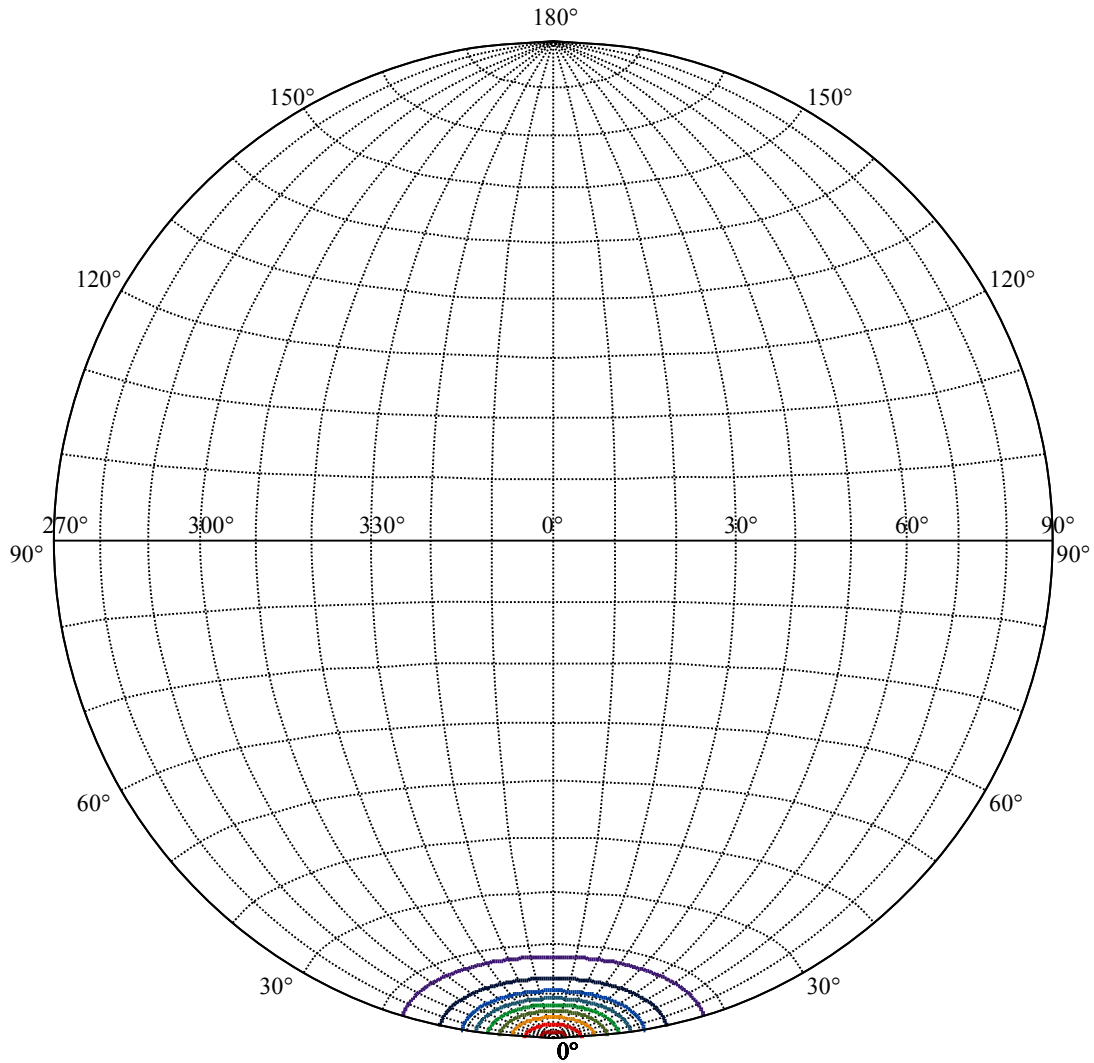
Field angle(10%Imax):C0/180Left:17.5 Right:17.5
:C90/270Left:17.5 Right:17.5

Beam Angle(50%Imax):C0/180Left:7.6 Right:7.6
:C90/270Left:7.6 Right:7.6





(10%Imax) 2194.55	—
(20%Imax) 4389.1	—
(30%Imax) 6583.64	—
(40%Imax) 8778.19	—
(50%Imax) 10972.7	—
(60%Imax) 13167.3	—
(70%Imax) 15361.8	—
(80%Imax) 17556.4	—
(90%Imax) 19750.9	—



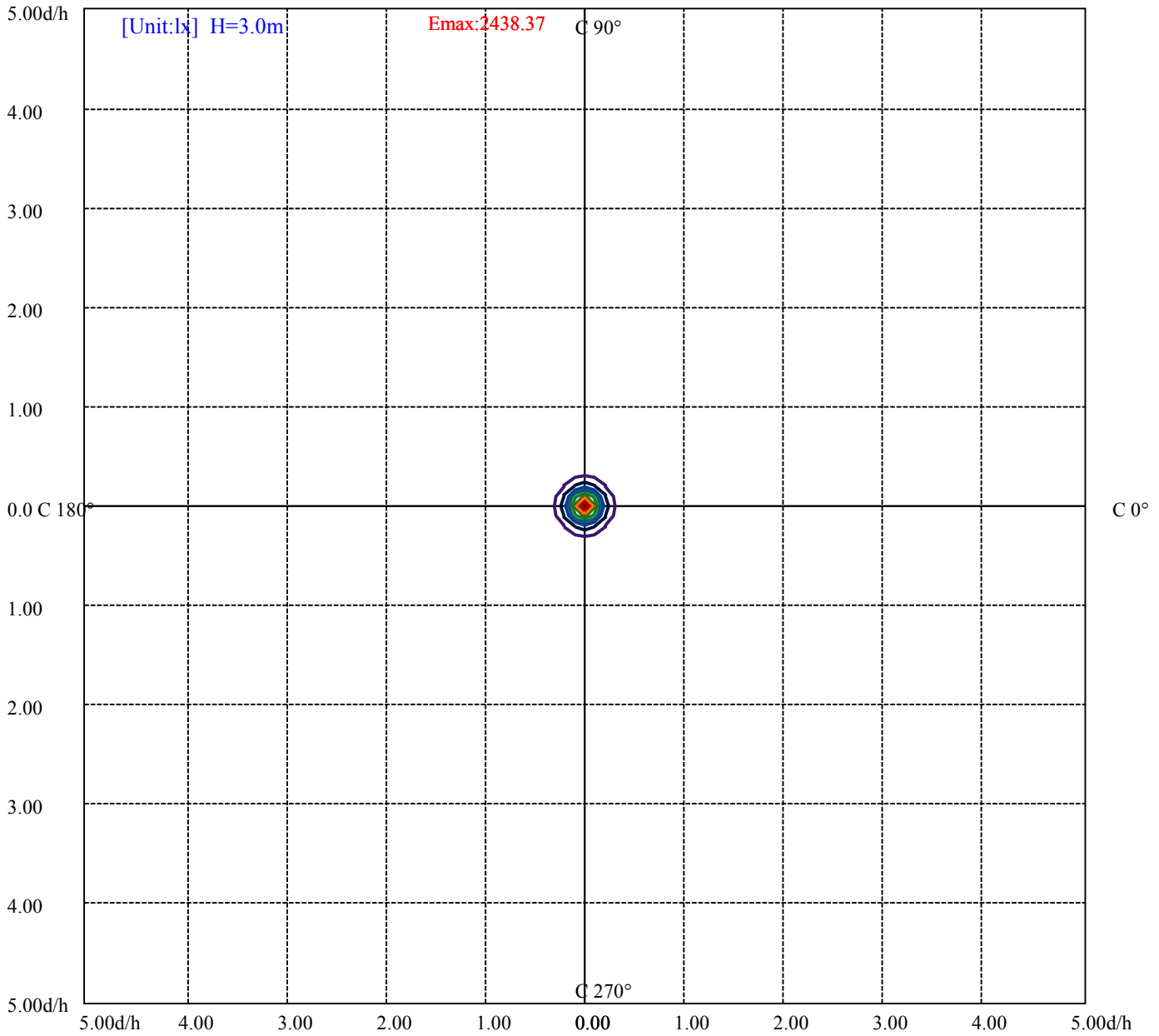
House

[Unit:cd]

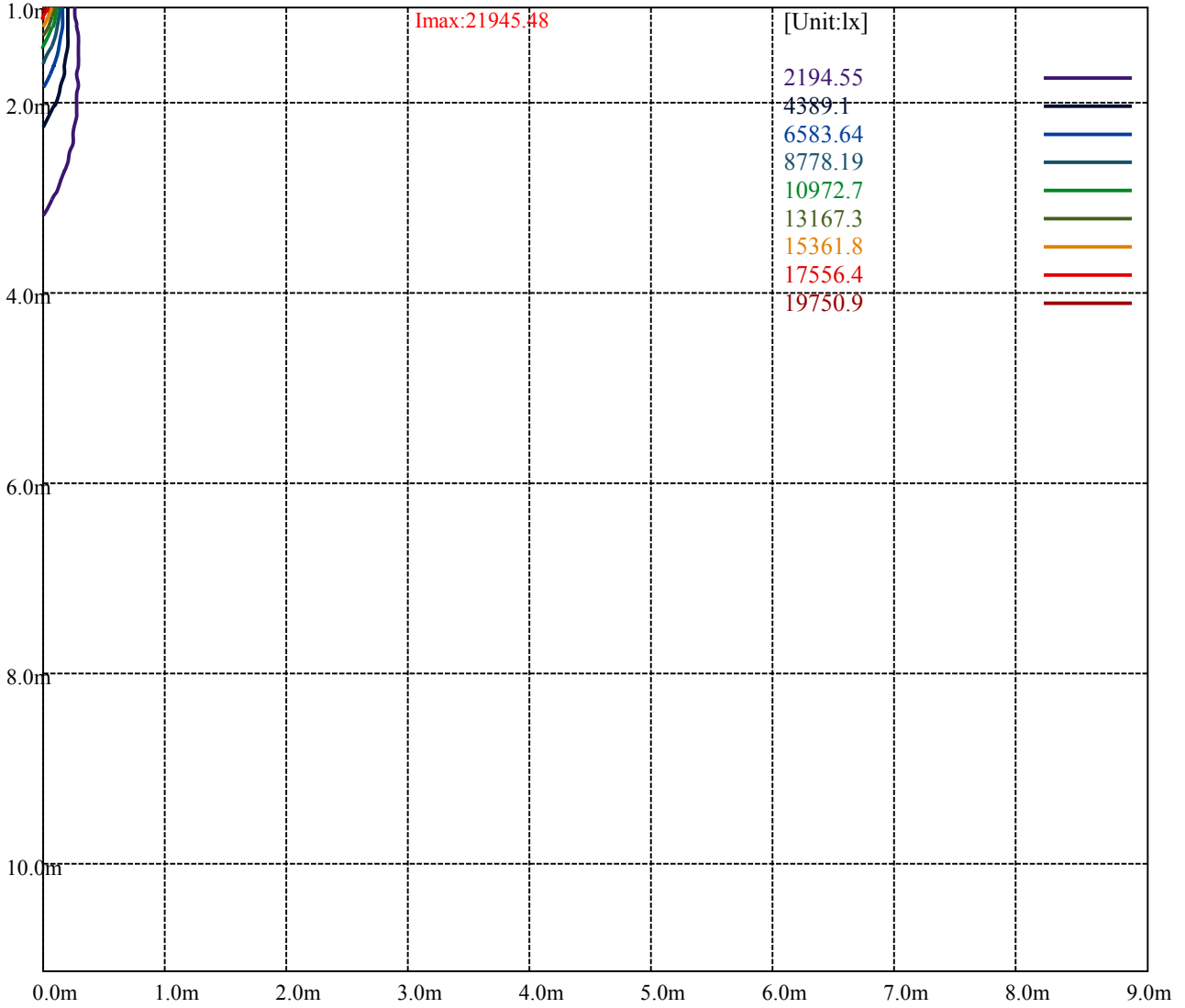
Road

Imax:21945.48

(10%Imax)	2194.55	—
(20%Imax)	4389.1	—
(30%Imax)	6583.64	—
(40%Imax)	8778.19	—
(50%Imax)	10972.7	—
(60%Imax)	13167.3	—
(70%Imax)	15361.8	—
(80%Imax)	17556.4	—
(90%Imax)	19750.9	—



- (10%Emax) 243.8367
- (20%Emax) 487.6733
- (30%Emax) 731.5089
- (40%Emax) 975.3456
- (50%Emax) 1219.178
- (60%Emax) 1463.022
- (70%Emax) 1706.856
- (80%Emax) 1950.689
- (90%Emax) 2194.533



Luminance Table

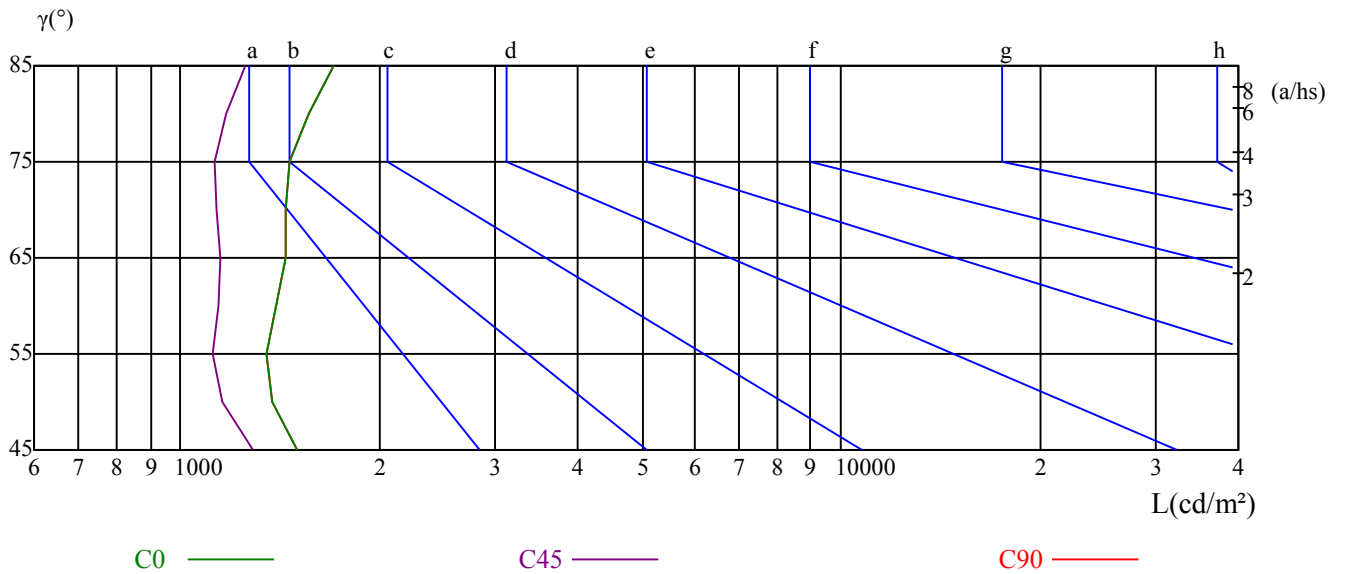
γ	45	50	55	60	65	70	75	80	85
C0	1505	1373	1352	1397	1440	1445	1461	1562	1712
C45	1285	1154	1120	1138	1152	1135	1123	1173	1251
C90	1505	1373	1352	1397	1440	1445	1461	1562	1712

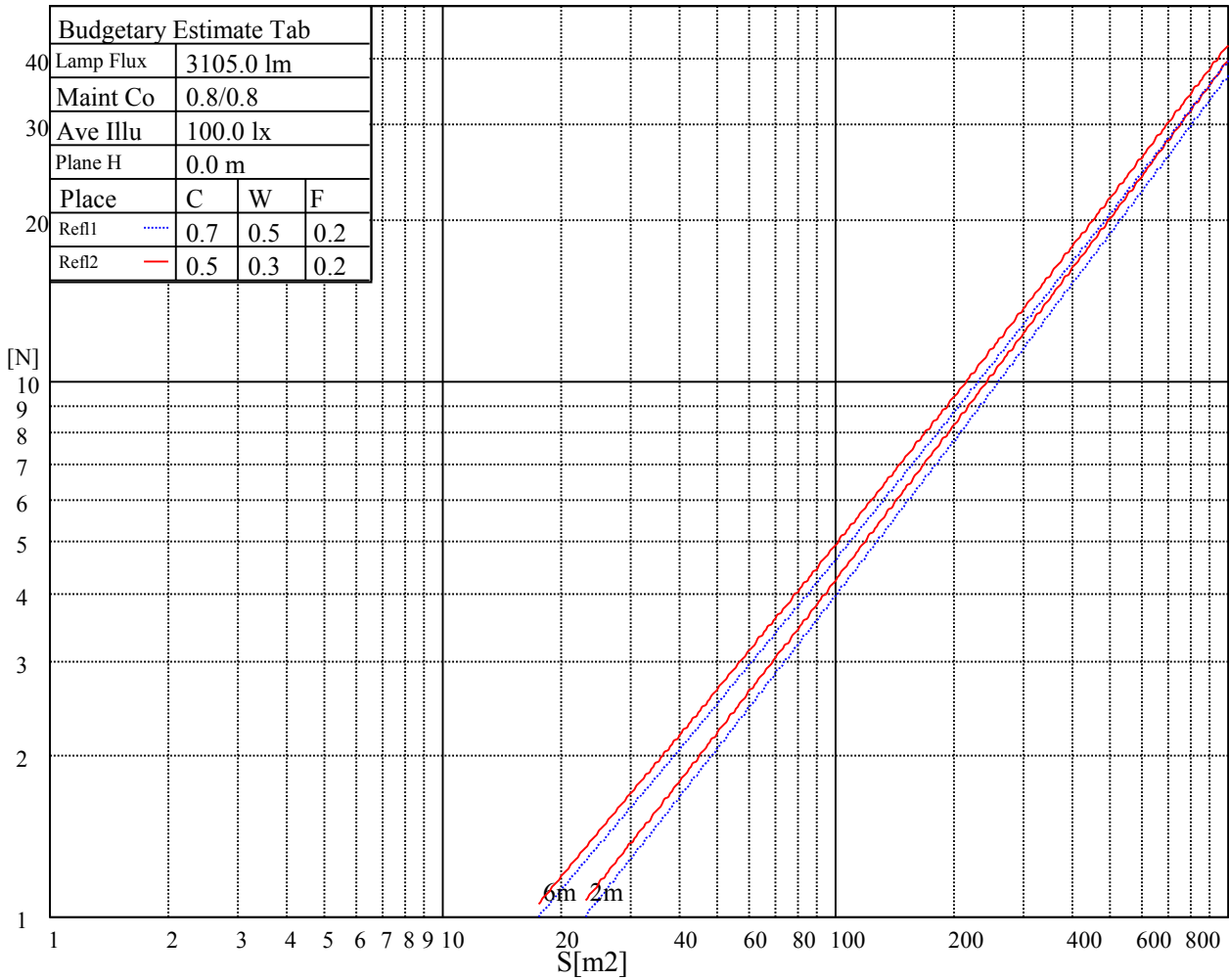
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3619	3619	3619	5308	5308	5308	15521	15521	15521

Glare Table

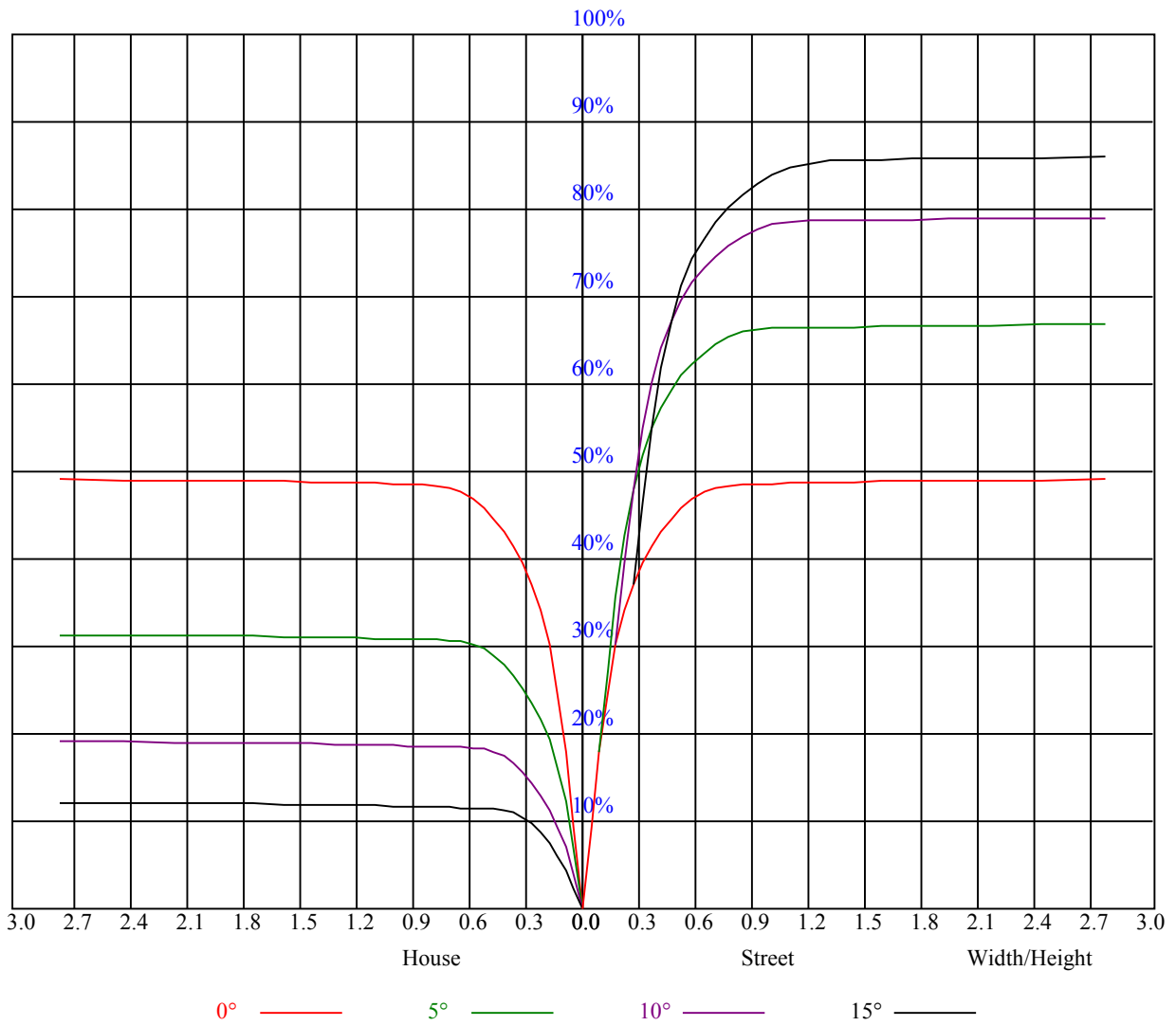
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

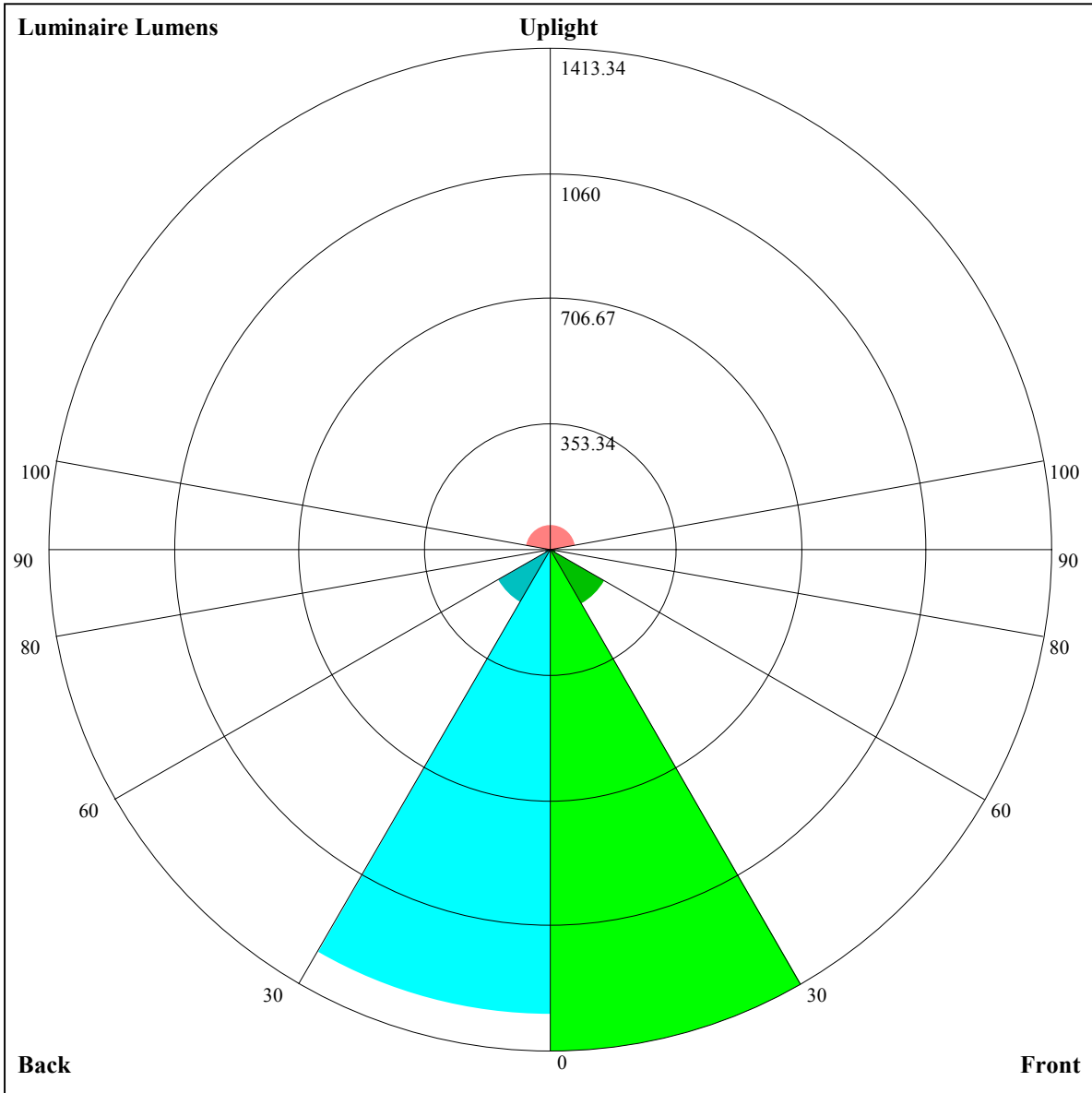
Luminance Limiting Curve





RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.21	1.21	1.21	1.18	1.18	1.18	1.13	1.13	1.13	1.08	1.08	1.08	1.04	1.04	1.04	1.02
1	1.09	1.05	1.02	1.07	1.03	1.01	1.02	1.00	0.97	0.98	0.96	0.94	0.95	0.93	0.92	0.90
2	1.03	0.99	0.95	1.02	0.98	0.94	0.98	0.95	0.92	0.95	0.93	0.90	0.92	0.90	0.88	0.87
3	0.99	0.94	0.90	0.97	0.93	0.90	0.95	0.91	0.88	0.92	0.89	0.87	0.90	0.88	0.85	0.84
4	0.95	0.90	0.86	0.94	0.89	0.86	0.92	0.88	0.85	0.90	0.86	0.84	0.88	0.85	0.83	0.81
5	0.91	0.86	0.83	0.91	0.86	0.82	0.89	0.85	0.82	0.87	0.84	0.81	0.86	0.83	0.80	0.79
6	0.88	0.83	0.80	0.88	0.83	0.80	0.86	0.82	0.79	0.85	0.81	0.79	0.84	0.81	0.78	0.77
7	0.86	0.81	0.77	0.85	0.80	0.77	0.84	0.80	0.77	0.83	0.79	0.76	0.82	0.79	0.76	0.75
8	0.83	0.78	0.75	0.83	0.78	0.75	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.77	0.74	0.73
9	0.81	0.76	0.73	0.80	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.71
10	0.79	0.74	0.71	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.70





Luminaire Lumens:

FL=1413.34,FM=177.21,FH=15.51,FVH=7.64

BL=1312.6,BM=170.48,BH=15.37,BVH=7.63

UL=15.03,UH=71.5

BUG Rating:B3-U2-G0

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	21791.32	17568.50	7179.35	2895.97	1521.21	1198.58	1043.32	629.85	42.17
45.0	22011.55	16660.07	7597.78	2901.47	1612.60	1210.14	1026.80	582.50	34.19
90.0	21995.03	15614.00	7365.45	3161.34	1804.75	1263.54	1025.32	489.62	31.38
135.0	21984.02	16197.59	7575.76	2901.47	1607.65	1214.54	1036.16	569.28	32.37
180.0	21791.32	10782.25	4865.33	2042.04	1351.63	1096.34	981.44	436.82	25.88
225.0	22011.55	10856.02	6516.48	2559.57	1499.74	1096.39	1007.86	458.62	30.23
270.0	21995.03	17816.25	8627.34	3474.06	1875.77	1280.06	1057.08	561.02	37.49
315.0	21984.02	15619.50	6757.07	2573.34	1517.90	1096.78	1005.27	414.13	31.55
360.0	21791.32	17568.50	7179.35	2895.97	1521.21	1198.58	1043.32	629.85	42.17

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	21.20	18.00	16.35	15.97	15.86	15.25	14.31	14.09	14.04
45.0	18.66	16.68	16.13	16.35	16.35	15.36	14.26	14.04	13.93
90.0	18.83	16.96	16.13	16.08	15.69	15.03	14.20	13.98	13.93
135.0	18.55	16.68	15.91	15.75	15.58	15.09	14.42	14.26	13.98
180.0	18.17	17.01	16.85	17.01	16.46	15.31	14.37	14.15	14.15
225.0	18.28	16.52	15.64	15.31	15.14	14.76	14.15	14.04	14.04
270.0	19.43	16.52	15.69	15.64	15.86	14.98	14.20	14.04	14.09
315.0	17.95	16.85	16.96	17.12	16.35	15.14	14.42	14.31	14.42
360.0	21.20	18.00	16.35	15.97	15.86	15.25	14.31	14.09	14.04

C/γ(°)	90.0
0.0	13.76
45.0	13.82
90.0	13.76
135.0	13.76
180.0	13.76
225.0	13.76
270.0	13.76
315.0	13.76
360.0	13.76